

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C.

In the Matter of

Closed Captioning of Video Programming

Telecommunications for the Deaf, Inc.  
Petition for Rulemaking

CG Docket No. 05-231

COMMENTS OF GLOBAL TRANSLATION, INC.

Michael J. Garr  
Chief Operating Officer  
8070 Georgia Avenue  
Suite 412-414  
Silver Spring, Maryland 20910  
mgarr@translatetv.com

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The Commission has requested comments on several aspects of the Commission's closed captioning rules, found at 47 CFR 79.1. *Closed Captioning of Video Programming, Telecommunications for the Deaf, Inc. Petition for Rulemaking*, CG Docket No. 05-231, Notice of Proposed Rulemaking, FCC 05-142 (July 21, 2005). The Commission previously stated that it would revisit this issue if there is evidence that marketplace incentives for quality captioning are inadequate. Global Translation, Inc. (dba: TranslateTV) has considerable, quantifiable evidence that the quality of captioning is far below what the Commission intended. Our company has collected and analyzed English captioning for over two years at over 20 television stations nationwide. The TranslateTV service uses English captions as a basis for generating Spanish translations. In the opinion of Global Translation, Inc, current captioning

standards fail to meet the statutory goal of ensuring that every person has equal access to this nation's communications services.

The current system of accountability for caption quality places the responsibility of monitoring quality control on the caption providers, and offers no uniform quality standard that is used across the industry. Global Translation, Inc. recommends that the Commission adopt a system for caption quality measurement that quantifies the intelligibility and accuracy of the captioned text, and applies a single, uniform standard to all caption providers in the United States.

### **Background for our comments**

TranslateTV translates English captions into Spanish captions and subtitles for national and local TV broadcasts using patent-pending software. The TranslateTV process is performed fully automatically, and in near real-time. TranslateTV is in use on The Tonight Show with Jay Leno, MSNBC, and on local NBC, CBS, UPN and ABC TV stations in five U.S. time zones in large, medium and small media markets including New York, Houston, Sacramento, Grand Rapids and San Juan, P.R. TranslateTV works with both electronic newsroom (ENT) caption systems and with live "stenocaptioners."

TranslateTV has recorded every line of English captions and Spanish translations broadcast at each of our locations. In some cases, this is over two years of caption data. We analyze and rate large samples of the data we collect on a daily basis. We believe, therefore, that we are in a unique position to comment on the quality of English captioning in the U.S. TranslateTV can provide this data to the Commission upon request.

The TranslateTV process requires high quality English captioning to produce Spanish translations. In our experience, the quality of captioning is frequently inadequate to allow a reader to fully understand the programming in addition to being insufficient for translation. Our experience also shows that the quality of captioning between different captioning companies and even among individual captioners within the same company varies greatly.

TranslateTV has developed closed caption pre-processing software that automatically edits the English captions to allow them to be used for translation. The pre-processing method is fully automated and takes less than one half of a second. The process improves the quality of captions to the point of making them translatable. However TranslateTV is not at every station providing this service. There are significant deficiencies in the quality of the English captions that interfere with the understandability of captions for hearing-impaired viewers and our translation process.

With the approach of the 15<sup>th</sup> anniversary of ADA, TranslateTV believes that the Commission must now revisit the issue of caption quality standards. The lack of and inconsistency of caption quality, even within most caption companies cries out for the Commission to take strong action. We enthusiastically support TDI's petition to the Commission for creating non-technical quality standards and a uniform monitoring system.

### **Mandating Non-technical Quality Standards**

The Commission expected that market forces would provide incentives for caption providers to produce high quality captions. For syndicated and network programming, this expectation has proven, for the most part, to be correct. When captions can be produced "offline" and edited prior to broadcast they are of high quality. However, at the level of local and regional programming of live content, market forces are insufficient to assure quality closed captioning. TranslateTV's logs of local station's newscasts indicate that, on average, between 25% and 60% of all captioned sentences contain errors that substantially impede understandability. TranslateTV classifies these errors by type and severity. This high error rate is true at stations using both live captioning and ENT. The stations and caption providers do not systematically monitor caption quality. Instead, their chief feedback mechanism is consumer complaints. When a complaint is received, most stations and providers will respond individually to the viewer, however there is no proactive monitoring system in place to quantify and analyze the overall rate of errors in captioning. The current feedback system is both reactive, and narrow in its impact.

Further, TranslateTV contends that the measures of quality used in the captioning industry are very misleading as indicators of the intelligibility and usefulness of the captioned text. The captioning industry uses a quality measuring system that counts the number of correct words in a caption, and calculates the percentage of words that are correct. This method doesn't take into account the impact of the errors on understandability. While some errors have a trivial effect on understandability, many others can significantly impair the viewer's ability to understand the programming, which is the purpose of the captions. The following caption sample from Houston, Texas aired January 12, 2005, provides an example:

06:03:51.497092 1/12: HARRIS COUNTY FIRST EVER BLACK FEMALE COMFORTABLE WANTS TO CLEAN HOUSE BY GETTING RID OF SEVERAL EMPLOYEES.

*TranslateTV Analysis:*

*-Punctuation error (Harris County's)*

*-Wrong word error ('comfortable' should be 'constable')*

06:03:55.425209 1/12: MAY WALKER TOLD ALL OF HER EMPLOY TOYS REAPPLY FOR THEIR JOBS --

*TranslateTV Analysis:*

- Wrong word (*employ* = *employees*)
- Wrong word (*toys* = *to*)
- Punctuation (*needs comma or period at end instead of double dash*)

06:03:58.402664 1/12: but ONLY PLANS TO BRING BACK 60% OF THE FORCE.

*TranslateTV Analysis:*

*Ok if the preceding sentence ended in a comma.*

06:04:11.984985 1/12: 10 DIDN'T REAN 14 WERE NOT OFFERED THEIR JOBS BACK DUE TO PRIOR WORK PERFORMANCE OR QUESTIONABLE RESULTS ON CRIMINAL BACKGROUND CHECKS.

*TranslateTV Analysis*

*-Wrong words ('10 didn't rean 14' = '10 didn't reapply and 14'...)*

06:04:15.285698 1/12: COME DEPUTIES HOPES IT RENEWS FAITH IN THE DEPARTMENT.

*TranslateTV Analysis*

*-Wrong word ('come' = 'some') ('hopes' = 'hope')*

Although the passage is extremely difficult to understand, the captioning industry standard would rate it as highly accurate. By the captioning industry's current method, the first sentence has a 94% accuracy because 16 of its 17 words are correct. However, the sentence in its entirety would be virtually impossible for a viewer to understand in the 1-2 seconds it is displayed. Even more importantly, because the critical phrase that is the subject of the story, is rendered incorrectly (a 'black female constable' = 'black female comfortable'), the reader's ability to understand the subsequent sentences is also impaired. Overall, the captioning industry would rate the passage 89% accurate because 6 of 67 words are wrong. However the intelligibility and usefulness of this story to a viewer is actually very limited.

TranslateTV has also observed that standard rules of English punctuation are often not followed in live captioning. Punctuation marks delineate grammatical boundaries in sentences and they are especially important to allowing the reader to 'parse' the sentence correctly in captions, where the text is displayed for only a brief period of time. Unlike other written texts, captions are displayed quickly and only one time. Caption viewers cannot go back and re-read passages that are unclear. TranslateTV recommends that any quality standards that are adopted must include use of proper punctuation.

Another important issue is that the quality measures used in the captioning industry do not typically compare captions to the actual audio of the program. Through examining captioned texts in conjunction with their actual broadcasts, TranslateTV has observed that the speakers often use words or phrases that do not show up in the captions. TranslateTV categorizes these situations as 'missing word' errors. They occur commonly in most closed captioning. As a result, the caption viewer is often receiving only a subset of the total program content. When the industry's word counting method is used to evaluate caption

quality, the problem of missing words is essentially invisible because there is no reconciliation of the program audio with the captioned results.

TranslateTV urges the Commission to create a meaningful quality standard based on the understandability of sentences, not on the counting of words. Quality measures that are based on the percentage of correct words are misleading as indicators of the intelligibility and usefulness of the overall captions. TranslateTV recommends a quality standard that takes into account the severity of errors and their impact on the understandability of each sentence, and of the program segment overall.

### **Mandating Quality Reporting**

TranslateTV urges the Commission to mandate monitoring of closed caption quality. Caption quality is not systematically monitored today – very few TV stations and closed caption providers even keep records of the captions they create. As a result, there is no means of monitoring the quality of the captions over time. In addition, the current system of no monitoring means that captioning problems can go undetected until a viewer observes the problem and complains. TranslateTV monitors all of the captions it processes. Frequently, we will observe captioning problems and report them to the television station before either the station or the caption provider is even aware of them.

The TranslateTV on-site unit logs the captions and then sends the files out via e-mail to TranslateTV's reviewing staff. The system can be easily modified to provide local station alarms and to send out regular, detailed quality reports, once the Commission sets a benchmark reporting requirement. The system provides exact records of what happened with time codes for every broadcast. Any similar system will allow consumers, broadcasters and the Commission to monitor compliance and to respond to consumer complaints in a timely manner, since any caption, in any broadcast, can be found by doing a simple word search or time code search in a matter of seconds.

### **Costs of Mandating Nontechnical Quality Standards**

Because closed captions can be monitored using software, the cost of monitoring is inexpensive. A caption monitoring unit requires a one-time cost of a few thousand dollars at most, and monitoring and reporting service should cost only a few hundred dollars per month. This is well within the financial capabilities of television broadcast stations, cable systems and other providers. Once the Commission acts, the marketplace will respond with competitive systems and pricing. The advances in technology and TranslateTV's real-world experience clearly show that monitoring captions would not be an undue burden or an economic hardship for the industry.

TranslateTV urges the Commission to look not just at caption standards for today, but to create quality standards that will be guideposts for the future of captioning technology. Advances in automated speech recognition, computer processing power, computational linguistics and data storage are converging at a rapid pace making automated captioning a realistic prospect. Automation brings the promise of greater accuracy, less delay and lower cost for captioning. TranslateTV and others are working on such products. Having a clear, well-defined quality standard from the Commission will focus and accelerate the progress toward high quality, automated, universal captioning. The Commission has the opportunity today to assure tomorrow's captioning is of the highest quality.

## **Conclusion**

The Commission has the opportunity with this Notice of Proposed Rule Making to have a profound and positive impact on the lives of millions of Americans living with hearing and speech disabilities and for the growing segment of Americans who's first language is not English. TranslateTV urges the Commission to take forceful measures that create a single, uniform caption quality standard based on proper punctuation, the understandability of sentences and active monitoring. By doing so, the Commission can assure that the highest quality of captioning services are provided today and in the coming digital future.